EVALUATING THE CULTURE-LED REGENERATION

Affortunato Francesca
University of Studies "G. d'Annunzio" – Chieti-Pescara
Faculty of Management Sciences

Castagna Alina
University of Studies "G. d'Annunzio" – Chieti-Pescara
Faculty of Management Sciences

Crociata Alessandro
University of Studies "G. d'Annunzio" – Chieti-Pescara
Faculty of Management Sciences

D'Angelo Francesca
University of Studies "G. d'Annunzio" – Chieti-Pescara
Faculty of Management Sciences

The aim of the paper is to propose a new approach to urban planning, evaluating the culture-led regeneration processes. In the last few years, the cultural turn in urban planning played a central role in the urban studies. In this way we try to elaborate a more robust perspective interpreting the complex phenomenology emerging from the culture-led regeneration processes. Within the concept of complexity we discuss about the "metabolic process" that are the processes necessary to transform energy, material and information in goods and service functional to the complex urban system life. The approach that will be employed is the MuSIASEM that is based on several novel concept and an innovative methods never applied in this research field.

Key words: Culture led regeneration, complexity, European integration, progressive system, MuSIASEM
JEL codes: R10, R20, Z10

1. Introduction

The issues of cities development trajectories and culture-led local regeneration have become more and more present within the urban studies (see Miles and Paddison, 2005, for a critical review). These emerging phenomena arose in a period of turbulent socio-economic change fuelled by globalization processes. According to these dynamics, virtually all of the cities, that are characterized by advanced levels of industrial development, are experiencing a massive re-shaping of their productive sectors. In this context, culture and creativity are clear examples of sectors characterized by high value added, high incidence of service and other intangible components, and by an interesting socio-economic impact on the local economies. At the European level this issue finds its institutional collocation inside the European research strategies developed by KEA Europe Affair. The year 2009 was designated as the "European Year of Creativity and Innovation". In that sense the European Commission (E.C., 2009) has drawn attention to the usefulness of culture and creativity in sustaining the emergence of innovation-led economy within the EU integration policies[741].
Moreover it is widely acknowledge the culture's contribution at a local level of analysis (OECD, 2005) in improving economic performance of local systems (Santagata, 2002;

[741] Actually, the culture and creative sector is found (E.C., 2006) to have both a direct, quantifiable socio-economic impact (it contributed to 2,6% of EU GDP in 2003 and accounted for 3.1% of total employed population in EU25 in 2004) and an indirect, non-quantifiable influence on the productivity of economic systems (by underpinning innovation dynamics).

Sacco and Ferilli, 2006; Scott, 2004; Valentino, 2003). The urban policy agenda is gradually including cultural and creative activities as a key driver in urban regeneration processes. As a matter of fact, it seems that culture and creativity are becoming new keywords in the understanding of new urban transformation (Musterd and Ostendorf, 2004). In that sense the "cultural turn" that emerged across the social sciences in recent years (Amin and Thrift, 2007) influences both the urban economic and policy systems (Crociata, 2009). Actually urban planning processes, fuelled by the culture-led regeneration, are moving toward complexity. This contribution aims to provide a new conceptualization of the cultural and creative sector by using an innovative set of semantic and analytical categories.
The paper is structured as follows: in the next section, we cope with the complexity and the relevance of time in the cultural and creative sector. In section 3 we present the MuSIASEM approach for the culture-led regeneration. Section 4 concludes.

2. Toward complexity.

2.1 Cities as a progressive system

A city can be conceptualized as a progressive system (Calafati, 2007) because it represents a sum of heterogeneous agents and a sum of heterogeneous relationships among them, coevolving progressively during the time, showing emergent pattern of development very difficult to predict. Since urban performance trajectories strictly depend on city's specific "structure", it is necessary to develop a methodological perspective able to capture the emerging phenomena that originate from the complex match between sustainable urban planning and the culture-led regeneration processes. That is possible by delineating three pertinent levels of description: (i) the structure of the system; (ii) the metabolic processes of the system, i.e. the processes that organize inputs as matter, energy and information into goods and services, functional to the system's objectives; (iii) the regulation mechanisms of the system.
In this paper we provide a new conceptualization of the cultural and creative sector by using an innovative set of categories derived from the bio-economics theory elaborated by Georgescu-Roegen (1971). When studying a socio-economic process in terms of energy, material and information conversions, there are two different categories of elements which have to be considered in order to be able to perceive/represent the cultural and creative sector in terms of metabolic processes[742]: "fund categories"[743] and "flow categories"[744].

2.2 The time relevance in cultural economics

Another important factor of complexity is the time relevance within the cultural economics studies[745]. A number of works show that time has a cost. The existence of these costs suggests a major feature of cultural activities: they are time intensive in consumption (see Becker 1965, Owen 1969). When time factor is applied to the analysis of demand the same conclusion is always reached: the price of leisure time negatively affects cultural consumption, therefore, these activities can only be described as time-intensive products (see Withers 1980, Zieba 2009).
The theories on the cost of time also attempted to the weak growth of cultural consumption associated with rising income. So, on one hand, higher revenue coincides to

[742] See Crociata and Veneri (2009) for an application of these categories.
[743] Fund elements have to be able to preserve - throughout the duration of the analysis - the same definition of themselves as converters.
[744] Refer to elements disappearing over the duration of the representation (that enter but do not exit) and/or elements appearing over the duration of the representation (that exit without having entered).
[745] Cultural economics is a branch of studies that grow up within economic theory (see Throsby, 1994; Towse, 2003).

a higher willingness to pay but, on the other, high revenue implies more working hours and consequently less free time.
A second reasons that drives us to make considerations on the time factor concerns the temporal evolution of consumer preferences. There is a sort of progression, so as that the more the time people devote to artistic and cultural activities in their past, the greater the present and future consumption will be (Becker and Stiegler, 1977; Brito and Barros, 2005; McCain, 1979). It should be also noted that the consumption of the arts and culture is characterized not only by the effects stemming from previous experiences but also by the effects arising from social interaction; past consumption and social consumption interact mutually reinforcing each other over time.

3. The MuSIASEM approach for the culture-led regeneration

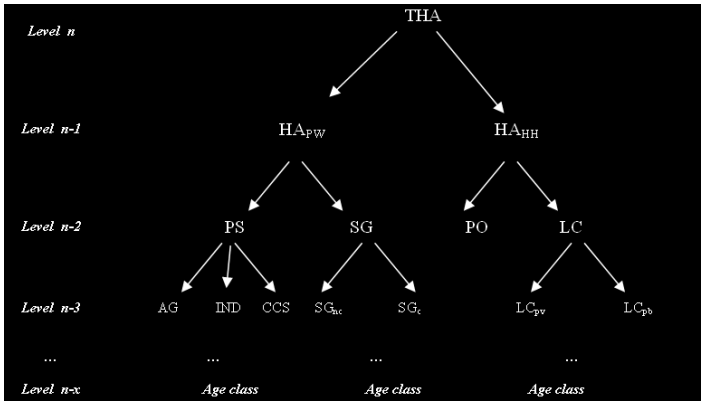
The MuSIASEM approach (Giampietro, Mayumi and Ramos-Martin, 2009), originally proposed as MSIASM by Giampietro and Mayumi (2000), has been developed in relation to the emerging field of science for governance. In particular it can be seen as an attempt to generate a methodological approach capable of providing a quality control on quantitative analyses applied to the issue of sustainability.
The MuSIASEM approach is radically different from conventional scientific tools. It uses a combination of conceptual tools derived from: (i) Complex System Theory, such as "Complex and progressive system", "Multi-Purpose Grammars", "Multi-Scale Integrated Analysis" (hierarchy theory); (ii) the seminal "Fund-Flow model", proposed by Georgescu-Roegen to implement the concept of Bioeconomics which is associated with the concept of "Societal Metabolism" to be interfaced with "Urban Ecosystem Metabolism" analysis. The main goals which are behind the MuSIASEM approach keep clearly separated the descriptive from the normative aspect. It represents in an integrated way the relevant changes in the performance of an investigated system, using an open set of criteria and indicators which can be defined on different scales and in relation to different narratives[746].
The MuSIASEM approach analyzes the metabolism of a society in regard to a dynamic budget in terms of "per hour of human activity". Funds stand for the attributes used to define "*what the system is*" and flow coordinates correspond to "*what the system does*" interacting with its environment. The flow-fund representation is based on *extensive* (additive) variables which define the size of the compartment, and *intensive* variables (ratio) which represent the pace of metabolism. This allows to use the same assessment when referring to a hierarchical structure, i.e. to the whole society and to a given subsector (Giampietro et al. 2009). The total amount of what is consumed in terms of hour of human activity at *level n* (the whole urban system) has to be *congruent* with the flow in the compartment of production at the *sub-level n-1*. The allocation of founds and flows over different compartments across each hierarchical level is useful to establish a relation between the characteristics of the *metabolic rate* between and within compartments. At the level of individuals (*level n-3*) we observe the conversion of *endosomatic*[747] energy into Human Activity (HA). At this level the population has to be divided in a set of type of individuals (*age class*). Each of this individual type distributes its own endowment of HA within a set of categories: Paid Work (PW), Physiological overhead (PO), Leisure Culture (LC). At this level, the congruence constraint is $HA_i = HA_{PW+} HA_{PO} + HA_{LC.}$
At the upper level (*level n-2*), the household level (HH), the focus moves on the conversion of *exosomatic*[748] energy associated to categories of HA within the socioeconomic process, with

[746] Obviously, this implies that MuSIASEM can provide only the analytical input within a process of integrated assessment.
[747] Information, energy and other material flows metabolized inside the human body for sustaining the physiological activity.
[748] Information, energy and other material flows converted outside the human body in order to preserve the efficacy of human activity.

reference to the interaction of HH with the rest of the system. On the one hand it means that HH requires an amount of services and products in which working hours, provided by the PW, are embodied. On the other hand HH supplies hours of PW to the society by maintaining and reproducing workers. At the level of economic sectors (*level n-1*) it is necessary to observe the linkage between the PW sector (*Production*) and the HH sector (*Consumption*). The congruence fund constraint is: $THA = HA_{HH} + HA_{PW}$.

This paper aims to investigate the role played by the cultural sector in urban regeneration. From this point of view, we consider the seminal hierarchical structure (Giampietro et al. 2009), focusing the role that culture plays in the socioeconomic system (see fig. 1) . Taking into account not only the total population, as it happens in per capita evaluations, but also the demographic structure, this approach allows to analyze the effect that any qualitative change in the cultural sector composition has on the urban socioeconomic system metabolism. In other words, the analysis investigates what happens in this sector in order to try to identify some of the mechanisms taking place at the age class level and vice versa. In this view, it is possible to analyze the socioeconomic characteristics of a culture-led regeneration of the urban system starting from analyzing how household members allocate their time in cultural and creative sector.

Fig.1: Hierarchical time use allocation in urban cultural-led regeneration
Fund category: Total Human Activities (THA)



HA_{PW}= Human Activities PW Sector; HA_{HH}= Human Activities HH Sector; PS= Productive Sector; AG= Agricoltural Sector; IND= Industry; CCS= Cultural and Creative Sector; SG= Service and Government; SGc= Service and Government in the Cultural sector; SGnc= Service and Government in other sectors; LC= Leisure Culture; LCpv= Leisure Culture in Private configuration; LCpb= Leisure Culture in public configuration.

4. Final remarks

Because of the lack of a full-fledged analysis of the deep causal links that make culture-led regeneration so important in the current scenario, it becomes difficult to assess what are the critical conditions that determine whether or not a given urban planning system may be successful. The MuSIASEM approach for the culture-led regeneration allows us to map the allocation of time over different sectors of human activities over different levels. Since our interest concerns the cultural sphere, we intend, in our future works, to effectively measure the hours of human activities spent in producing and consuming cultural and creative "goods" in particular cities of interest. Then we intend to use these data as the "fund category" necessary to construct "intensive variables", such as income/hour, energy/hour, human capital/hour, etc. These intensive variables are to be used for assessing the contribution of culture-led processes to urban metabolism, through comparisons with other sectors of human activity. This approach could be suitable to evaluate cultural urban performances within the context of international competition deriving from globalization and European integration.

With regard to the feature of the culture that cannot be always consumed in a location distant from where it is produced, this approach is useful to analyze the spatial distribution of the cultural and creative activities within the city borders.

References

1. Amin A., Thrift N. (2007), *Cultural-economy and cities*, Progress in Human Geography, 31 (2), 143-161.
2. Becker G. (1965), *A theory of the allocation of time*, The Economic Journal, 75, 493-517.
3. Becker G. S., Stigler G.J. (1977), *De gustibus non est disputandum*, American Economic Review, 67, 76-90.
4. Brito P. , Barros C. (2005), *Learning-by-consuming and the dynamics of the demand and prices of cultural goods,* Journal of Cultural Economics, 29 (2), 83-106.
5. Calafati A.G. (2007), *La città come "sistema progressivo": evoluzione strutturale e sviluppo economico*, Italian Journal of Regional Science, 3/2007, Franco Angeli, Milano.
6. Crociata A. (2009), *Cultural economics: a discipline mutidimensional interpretation*, Global & Local Economic Review, 13 (1), 101-122.
7. Crociata A. and Veneri P. (2008), *Il settore culturale nello sviluppo urbano: il caso di Ancona*, Archivi di studi urbani, 93, 77-96.
8. European Commission (2006), The Economy of Culture in Europe, KEA European Affairs.
9. European Commission (2009), The impact of culture on creativity, KEA European Affairs.
10. Georgescu-Roegen N. (1971), The Entropy Law and the Economic Process, *Harvard University Press*, Cambridge.
11. Giampietro, M., Mayumi, K., and Ramos-Martin J. (2009). *Multi-scale integrated analysis of societal and ecosystem metabolism (MuSIASEM): Theoretical concepts and basic rationale*, Energy, 34, 313-322.
12. Giampietro M., Mayumi K. (guest editors) (2000), Societal metabolism and multiple-scales integrated assessment, Popul Environ 2000;22(2), 95–254.
13. McCain R. (1979), *Reflection on cultivation of taste*, Journal of Cultural Economics, 3, 30-52.
14. Miles S., Paddison R. (2005), *The rise and rise of culture-led urban regeneration*, in Urban Studies, 42(5), 833 – 839.
15. Musterd S., Ostendorf W. (2004) "Creative Cultural Knowledge Cities: Perspectives and Planning Strategies", *Built Environment* 30 (3), 189-193.
16. OECD (2005), *Culture and local development*, OECD, Paris.
17. Owen J.D. (1969), The price of leisure, Rotterdam University Press, Rotterdam.
18. Sacco P. L., Ferilli G. (2006), *Il distretto culturale evoluto nell'economia post-industriale*, DADI/ WP_4/06.
19. Santagata W. (2002), *Cultural districts, property rights and sustainable economic growth,* International Journal of Urban and Regional Research, 26, 9-23.
20. Scott A. J. (2004), *Cultural-products industries and urban economic development. Prospects for growth and market contestation in global context*, Urban Affairs Review, 39 (4), 461-490.
21. Throsby D. (1994), *The Production and Consumption of the Arts; A view of Cultural Economics*, Journal of Economic Literature, 1-29
22. Towse R. (2003), A Handbook of Cultural Economics, Edward Elgar, Northampton, MA.
23. Valentino P.A. (2003), Le trame del territorio. Politiche di sviluppo dei sistemi territoriali e distretti culturali, Sperling & Kupfer Editori, Milano.
24. Withers G. (1980), *Unbalanced Growth and the demand for performing Arts: an Econometric Analysis*, Southern Economic Journal, 46, 735-742.
25. Zieba M. (2009), *Full-income and price elasticities of demand for German public theatre*, Journal of Cultural Economics, 33, 85-108.